

**What is claimed is:**

1. A method for reducing an exhaust carbon dioxide comprising the steps of:

preparing agglomerates of solid particles containing at least one compound selected from the group consisting of  $\text{CaO}$  and  $\text{Ca(OH)}_2$  ;

contacting an exhaust gas containing  $\text{CO}_2$  with the agglomerates of the solid particles in a reaction chamber, the solid particles having a film of adhesive water on a surface of the solid particles; and

fixing  $\text{CO}_2$  in the exhaust gas as  $\text{CaCO}_3$  in the solid particles to reduce  $\text{CO}_2$  in the exhaust gas.

2. The method according to claim 1, wherein the agglomerates of the solid particles are obtained by pulverizing materials containing  $\text{CaO}$  and/or  $\text{Ca(OH)}_2$  into grain and/or rough grain.

3. The method according to claim 1, wherein the step of contacting the exhaust gas comprises contacting an exhaust gas containing  $\text{CO}_2$  with the agglomerates of the solid particles by blowing the exhaust gas into the agglomerates of the solid particles.

4. The method according to claim 3, wherein the exhaust gas containing  $\text{CO}_2$  is blown into the agglomerates of the solid particles from one direction.

098453 042701  
T.O. 240-EE544860

5. The method according to claim 1, wherein the water content in the agglomerates of the solid particles is from 3wt.% to 20wt.%.
6. The method according to claim 1, wherein a grain size of the solid particles is substantially 5 mm or less.
7. The method according to claim 1, wherein the exhaust gas be introduced into the reaction chamber has a temperature of a boiling point of water or lower within the reaction chamber.
8. The method according to claim 1, wherein a temperature in the reaction chamber is at a boiling point of water or lower.
9. The method according to claim 1, wherein a temperature of the agglomerates of the solid particles is at a boiling point of water or lower within the reaction chamber.
10. The method according to claim 1, wherein the step of contacting the exhaust gas containing CO<sub>2</sub> with the agglomerates of the solid particles comprises contacting a pressurized exhaust gas with the agglomerates of the solid particles.
11. The method according to claim 1, further comprising the step of saturating H<sub>2</sub>O in the exhaust gas, prior to

00844533.042701

contacting the exhaust gas with the agglomerates of the solid particles.

12. The method according to claim 1, wherein the water content in the agglomerates of the solid particles is in a range of from 3 to 20wt.%, and the exhaust gas is blown into the agglomerates of the solid particles, to contact the exhaust gas with the agglomerates of the solid particles.

13. The method according to claim 12, wherein the exhaust gas introduced into the reaction chamber has a temperature of a boiling point of water or lower within the reaction chamber, the reaction chamber has a temperature of the boiling point of water or lower, and the agglomerates of the solid particles to be contacted with the exhaust gas has a temperature of the boiling point of water or lower within the reaction chamber.

14. The method according to claim 13, further comprising the step of saturating  $H_2O$  in the exhaust gas prior to contacting the exhaust gas with the agglomerates of the solid particles.

15. The method according to claim 1, wherein the agglomerates of the solid particles are at least one material selected from the group consisting of a slag generated in an iron and steel making process and a concrete.

09044533-042704

16. The method according to claim 1, wherein the solid particles of the agglomerates are at least one material selected from the group consisting of a slag generated in an iron and steel making process and a concrete.

17. The method according to claim 1, wherein the agglomerates of the solid particles are at least one material selected from the group consisting of a slag generated in an iron-steel making process, a concrete, a mortar, a glass, an alumina cement and a CaO containing refractory.

18. An underwater immersion block produced by a method comprising the steps of:

preparing a mixture comprising a granular slag produced in a steel manufacturing process; and

producing a carboxide by a carbonation reaction of a mixture to agglomerate the mixture by using the produced carboxide as a binder.

19. A method of producing an underwater immersion block, comprising the steps of:

preparing a mixture comprising a granular slag produced in a steel manufacturing process;

forming a packed bed using the mixture; and

effecting a carbonation reaction of the mixture in the packed layer to agglomerate the mixture.

0934453701

20. A method of creating a seaweed bed comprising the steps of:

temporarily immersing a material comprising a heavy material in an existing seaweed bed so that marine algae adhere and grow on a surface of the material;

recovering the material and transporting the material as a seed material in a place for creating the seaweed bed; and

arranging a material for adhering the marine algae thereto around the seed material so that the marine algae on the seed material is proliferated to the other material.

Add a3 >

Add  
C1

FOI 240-EE544360